

WHAT IS CLAIMED IS:

1. An apparatus for generating a driving voltage for a sense amplifier in a memory device, the apparatus comprising:

5 voltage output means for outputting a predetermined value of voltage for driving the sense amplifier to a node;

a first core voltage step-up means connected between a power supply and the node; and

a second core voltage step-up means connected between
10 the power supply and the node,

wherein the first and second core voltage step-up means are turned on in sequence to elevate the voltage level of the node connected with the sense amplifier up to the level of the power supply.

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2. The apparatus as set forth in claim 1, wherein the first core voltage step-up means includes a first transistor, the second core voltage step-up means includes a second transistor, the first core voltage step-up means is enabled
20 in response to a bank active signal, and the second core voltage step-up means is enabled in response to a sense amplifier enable-signal.

3. The apparatus as set forth in claim 2, wherein the

first transistor is smaller-sized than the second transistor.

4. The apparatus as set forth in claim 2, wherein the
voltage output means are inoperative when the first core
5 voltage step-up means is enabled.

5. The apparatus as set forth in claim 1, wherein the
voltage output means are arranged corresponding to each of
banks in the memory device.

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